



4. 
$$\frac{\partial w}{\partial t} = a \frac{\partial}{\partial x} \left( w^m \frac{\partial w}{\partial x} \right) + bw^{1-m}.$$

Functional separable solution:

$$w(x, t) = \left[ \frac{(x + A)^2}{F(t)} + B|F(t)|^{-\frac{m}{m+2}} - \frac{bm^2}{4a(m+1)} F(t) \right]^{1/m}, \quad F(t) = C - \frac{2a(m+2)}{m}t,$$

where  $A$ ,  $B$ , and  $C$  are arbitrary constants.

### References

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